

10th, 8:30 a. m., 9 in SE. quadrant; 12th, 11 a. m., 1 in SE. quadrant; 13th, 7 a. m., 5 spots—1 in SE quadrant and 4 in NW. quadrant; 14th, 3 spots; 15th, 7 a. m., 2 in SE. quadrant; 18th, 9 a. m., 3 in NW quadrant; 19th, 4 in SW. quadrant; 20th, 5 in SW. quadrant; 22nd, 3 in SW. quadrant. No observations were made on the 9th and 11th; on the 16th and 17th the sun was hidden; on the other days of the month, observations were made but no spots seen. Prof. Hess says: "The sun spot observations were of unusual interest. At least one of the spots mentioned, namely, that observed on the 12th alone, and on the 13th, together with 4 others, and, perhaps, also some of the group of 9 spots observed on the 10th, did not disappear by solar rotation, but seemed to fade away long before they would have disappeared by rotation." Mr. William Dawson, Spiceland, Ind., noticed the following spots: 7th, one group of 4 large spots, faculæ very prominent, clouds prevented good observations; 8th, fine group of 14 spots near east edge, faculæ very beautiful; 9th, 25 spots in the group, 6 very prominent; 10th, 25 spots, one group, one spot quite large with penumbra; 11th, 20 spots, the large one having divided into 3; 12th, only 10 spots in the late group, and all small but one, another group of 8 small spots in SW. quadrant, 2 spots and faculæ at east edge; 13th, 30 spots in three groups, 10 spots in the waning group near centre, 14 spots in SW. group and 6 spots in new group at east edge; 14th, 20 spots in four groups, new group at SW. margin; 18th, 13 spots in one group in NW. quadrant, 3 large; 20th, 25 spots in two condensed groups near together, about 3' from west edge. No spots from 22nd to 31st, inclusive.

Prof. Gustavus Hinrichs, of Iowa City, Iowa, says: "A group of sun spots, comprising two very large spots, traversed the sun's disk between the 14th and 21st.

Observations were also made throughout the month at Fort Whipple, Va., but no spots were seen.

NOTES AND EXTRACTS.

Alexander Buchan, in *Nature*, October 22nd, 1879, briefly discusses the Greenwich Meteorological Observations from 1854 to 1873. He says: "There can be no doubt that in these twenty years' average we have the closest approximation to the mean monthly diurnal inequality of the barometer, in other words, to one of the prime factors of the meteorology of Greenwich. Of special interest are the results for the warmer months of the year, which class Greenwich among the places in middle and higher latitudes, whose climates are more or less continental in their character—these more special features being the occurrence of the forenoon maximum as early as 9 a. m., and a marked diminution in the amount and amplitude of the morning minimum. The almost strictly local character of the diurnal phases of atmospheric pressure, as disclosed by the observations at Greenwich, is seen from the occurrence of the a. m. maximum an hour earlier at Kew, where also the a. m. minimum becomes still less pronounced than that of Greenwich. On the other hand, at Falmouth, the a. m. minimum is much the greater of the two daily minima, and the a. m. maximum is delayed from two to three hours later than at Greenwich. Hence the true value of the Greenwich results can only be appreciated after a comparison has been made between them and the results obtained from other meteorological observatories."

"The observations of temperature are discussed with particular fulness, and the length of time is sufficient to give curves showing a diurnal inequality of temperature such as will substantially represent the curves for large portions of the south of England, not bordering the sea, where the thermometers are similarly placed to those at Greenwich."

"The curves of temperature for the different winds have also been worked out with much elaboration, and give most interesting results."

"On the average of all the months the N. wind is the coldest, the S. W. the warmest; the order as regards temperature, beginning with the coldest, is N., NE., NW., E., SE., W., S., SW.—an order, however, which differs in different months."

"In a large number of years the third barometric maximum, first noted by Rikatscheff as occurring in certain regions of the globe a little after midnight, appears in the Greenwich diurnal curves for December, January and February, less frequently in March, and seldom or not at all in the other months. The somewhat rough method which has been adopted in reducing the barometric observations to 32° unfortunately renders the evidence furnished by the Greenwich results regarding the more refined inquiries of meteorology, such as this, and the mean diurnal inequality of the barometer in the lunar months, not so satisfactory and conclusive as might have been wished."

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